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Spaceport News

John F. Kennedy Space Center - America's gateway to the universe

http://www.nasa.gov/centers/kennedy/news/snews/spnews_toc.html

STS-116 crew completes training for December launch

Crew members for the mission STS-116 completed the terminal countdown demonstration test on Nov. 13 to 16 in preparation for the upcoming 12-day mission to the International Space Station. Launch is targeted for Dec. 7.

The countdown test is standard prelaunch training and provides a crew with opportunities which include emergency egress training, a simulated launch countdown and payload familiarization.

The STS-116 crew members include Commander Mark Polansky, Pilot William Oefelein, Mission Specialists Robert Curbeam, Joan Higginbotham, Nicholas Patrick and Christer Fuglesang, and Flight Engineer Sunita Williams, who will join Expedition 14 in progress. Williams will return home next summer following Endeavour's STS-118 mission.

During the STS-116 mission, three spacewalks spread across the seven days of docked operations will involve the P5 spacer installation and reconfiguration of cables so that flight controllers in Mission Control at the Johnson Space Center in Houston can send commands to swap power generation and distribution from half of the P6 arrays to the newest P4 pair.

In addition to the P5 spacer, Discovery's payload bay also houses a small, pressurized logistics module holding supplies and an integrated carrier delivering space station hardware and three small satellites to be deployed after the shuttle has undocked from the space station.

The 20th shuttle mission to the International Space Station represents the most choreographed assembly flight to date for the shuttle and station crew members and flight controllers in Mission Control, who will send all

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THE MISSION STS-116 crew poses in the White Room on Launch Pad 39B. Clockwise from left are Mission Specialists Robert Curbeam and Sunita Williams, Pilot William Oefelein, Mission Specialist Joan Higginbotham, Commander Mark Polansky, and Mission Specialists Christer Fuglesang and Nicholas Patrick.

Kennedy team earns NASA Invention of the Year award

By Charlie Plain
Staff Writer

When a groundwater treatment team at Kennedy Space Center in Florida recently won NASA's Invention of the Year award, the honor came as a pleasant shock.

"We about fell out of our chairs," said Jackie Quinn, an environmental engineer with the group. The team — made up of NASA's Quinn, Kathy Brooks and University of Central Florida researchers Chris Clausen, Cherie Geiger and Debbie Reinhart — received the award for developing a simple and clever substance for cleaning up water and soils contaminated by harsh, chlorinated solvents.

"It was like a dream come true! I couldn't believe it," beamed Brooks.

Chemists classify chlorinated solvents as "dense non-aqueous phase liquids" which, like oil and water, won't mix together and remain separated in layers of liquid. The solvents are called "DNAPLs" for short and are harmful to the environment.

"For so long, chlorinated solvents were used because they were considered so safe to humans. They didn't know about the toxicity or long-term clean up issues," explained Brooks.

A standard method for treating contaminated water is to place iron walls in the water and let the metal reaction transform the offending

(See INVENTION, Page 7)

ANTHONY MATURO (third from right), NASA's director of the Inventions and Contributions Board, recognizes NASA's Government and Commercial Invention of the Year recipients, from left, Jacqueline Quinn, Dr. Christian Clausen from UCF, Katherine Brooks, and Drs. Cherie Geiger and Debra Reinhart from UCF during KSC's Space Act Awards.

The Kennedy Update

Jim Kennedy
Center Director

There is much excitement as we return from our enjoyable Thanksgiving holiday with Discovery and the STS-116 crew members ready for their mission to install the P5 spacer and rewire the International Space Station's power supply. In less than two weeks, the 20th shuttle mission will be the most sequenced assembly flight to date as Mission Control works with the crew to redistribute power from one location to another.

STS-116 Commander Mark Polansky and his six-member crew expressed their thanks to our work force after completing their Terminal Countdown Demonstration Test last Thursday and look forward to returning to Kennedy just before launch.

You may be interested to know Mission Specialist Joan Higginbotham rose from the ranks of a Kennedy engineer before being accepted in the astronaut corps in 1996 and will be making her first trip into space. She will be operating the complex robotics arm aboard Discovery, including the deployment of three small satellites once the shuttle undocks from the space station.

Just as this upcoming mission will advance our nation's Vision for Space Exploration, our Applied Technology directorate is improving applications for human space flights as they work with the SpaceX Falcon I rocket team for its upcoming flight from Kwajalein Atoll in the South Pacific.

Two NASA-developed systems will fly aboard Falcon I, including the Autonomous Flight Safety System and the low-cost Tracking Data and Relay Satellite System.

These systems help lower the cost of range operations and greatly improve the safety of the vehicle. This is another example of NASA working with the private sector as we continue to find ways to advance space exploration.

While Discovery sat poised at Launch Pad 39B, many of you took advantage of the 2006 Family Day and were able to show your family and friends the orbiter and the facilities necessary to prepare the shuttle fleet and our Launch Services Program missions for flight. No matter what age, the visitors were truly inspired about how you contribute to the nation's space program as they walked through the Vehicle Assembly Building and other historic landmarks.

> "No matter what age, the visitors were truly inspired about how you contribute to the nation's space program."

With more than 100 exhibits set up throughout the center, as well as at the Cape Canaveral Air Force Station and the Naval Ordnance Test Unit, we all showed why we are KSC and proud to be!

You can also be proud to know the 2005 NASA Invention of the Year was developed right here at our own center. Working with a team from the University of Central Florida, NASA's Jackie Quinn and Kathy Brooks developed a simple substance for cleaning water and soil contaminated by solvents.

The technology was developed as a solution to clean up areas around the center polluted by chemicals used during the 1960s to clean rocket parts. Read more about this environmentally friendly solution in this issue of *Spaceport News*.

The flu season usually peaks between December and March, and I have already received my flu vaccination. I hope you will take advantage of the Occupational Health Facility administering the vaccine free to the KSC work force on a first-come, first-served basis. Be safe, be well, and I'll see you around the center!

NASA November employees of the month

The NASA November employees of the month include, from left, Jeremy Parsons, International Space Station and Payload Processing; Carlos Garcia, Constellation Project Office; Jeffrey Hibshman, Safety and Mission Assurance; Kay Craig, Center Operations; Brian Beaver, Launch Services Program; Rick Deakins, Information Technology and Communications Services; Mary Kiss, Procurement Office; and Andrew Swift, Launch Integration Office.

CENTER DIRECTOR Jim Kennedy (fifth from right) talks to guests outside the Orbiter Processing Facility bay 2 during the Nov. 18 Family Day, when more than 44,000 people were able to tour facilities at KSC, the Cape Canaveral Air Force Station and the Naval Ordnance Test Unit. The 2006 Family Day was the first opportunity for center employees to escort family and friends on a tour of these facilities since 2000. For more about this year's event, see pages 4-5.

Annual Space Act Awards lunch honors KSC's innovators

By Linda Herridge
Staff Writer

NASA's Government Invention of the Year and Commercial Invention of the Year recipients, along with more than 100 NASA and contractor workers, were recognized during Kennedy Space Center's 2006 Space Act Awards Lunch on Nov. 9 at the Debus Conference Center.

Awardees received a combined total of $211,450 in Space Act dollars during fiscal year 2006 for their work in the development of innovations in various disciplines.

Dr. Jacqueline Quinn, an environmental engineer in the Applied Sciences division of the Kennedy Technology directorate, and Katherine Brooks, an analytical chemist in the center's Materials Science Laboratory of the Center Operations directorate, along with Drs. Christian Clausen, Cherie Geiger and Debra Reinhart from the University of Central Florida were honored for their work to treat groundwater by developing emulsified zero-valent iron, also known as EZVI.

"You should all be very proud of what you've accomplished here at KSC," said Anthony J. Maturo, director of the Inventions and Contributions Board at NASA Headquarters. "The EZVI technology will benefit the international community to help improve our environment."

RECIPIENTS OF the NASA Space Act Awards, who received a combined total of $211,450 during fiscal year 2006, gather in the Rocket Garden outside the Debus Conference Center.

Guest speaker Dr. Tom O'Neal, associate vice president of research at the University of Central Florida, presented a summary of accomplishments in UCF's academic and incubator programs. He said the university encourages entrepreneurship and that research projects with NASA have a net value of at least $50 million.

"NASA has made a huge contribution to, and been a great inspiration to entrepreneurship," O'Neal said. "Someone has to be the innovator."

Since 1992, KSC Space Act Awards totaled nearly $1.6 million. For more information about Space Act Awards and the Technology Transfer Program, visit **http://www.technology.ksc.nasa.gov**.

* * *

The 2006 Space Act Awardees

NASA: Jose Amador, John Apfelbaum, Dennis Armstrong, Kathleen Brooks, Luz Calle, Grant Cates, Michael Conroy, Steven Czaban, Steven Davis, Adam Dokos, Carly Donahue, Priscilla Elfrey, James Fesmire, Michael Fuchs, Paul Hintze, Curtis Ihlefeld, Linda Jones, Tony Killiri, Michael Lane, Kurt Leucht, Wenyan Li, Alan Littlefield, Maria Lopez-Tellado, Angel Lucena, Dale Lueck, Louis MacDowell III, Alton Mangham, Gregory Melton, Frank Merceret, Philip Metzger, Thomas Moss, Donald Parker, Jose Perotti, Jacqueline Quinn, Daniel Rowe, Glenn Semmel, Joseph Schuh, Paul Schwindt, William Sloan, Kevin Smith, Tent Smith, Stan Starr, Martin Steele, Eric Thaxton, Steven Van Meter, Jennifer Ward, Douglas Willard, Martha Williams and Robert Youngquist.

ASRC: Norman Blalock, Bradley Burns, Irving Bushnell III, Robert Cox, Jesus Dominguez, Christopher Immer, Steven Klinko, John Lane, Francisco Lorenzo-Luaces, John Taylor, Ivan Townsend, Carlos Mata, Kevin Murtland, Rebecca Oostdyk, Steven Parks, Jeffrey Rees, Steven Stout and Peter Vokrot.

The Boeing Company: Richard Bard, Brenda DiSanto, Robert Edwards, Kenneth Hollifield, Robert Humeniuk, William Kisner, Mia Little, Hui-Han Liu, Tien-Chi Ma, F. Allan Schwarb and Charles White.

Dynamac Corp: Leonard Reinhart.

ENSCO, Inc.: Winifred Lambert and Greg Taylor.

Sierra Lobo: Stanislaw Augustynowicz.

Space Gateway Support: Jeff Bouley, Donald DiMarzio, Jason Doyle, Deborah Funkhouser, Richard Saylor, Christopher Schmitt, Smita Solanky, Jill Sprinkle and Richard Warnock.

United Space Alliance: Mary Jo Al-Shihabi, Christopher Anderson, Albert Barretta, Martin Belson, Russell Brucker, Steven DeFillips, Janet Delcambre, Dennis Dougherty, Wilber Geiger, Darrell Gheen, Bryan Hall, Derek Hardin, Peter Kent, Nadean King, Nora Lavinka, Kathy Laws, Louis Locklear, Kenneth Lotti, Brent Mitchell, Henry Morris, Sharon Myers, Elkin Norena, Danny Owens, Jolana Ramsey, Michael Raney, Tina Robertson, Antonio Rodriguez, Domenico Ruggiero, Stephen Seberger and Stephen Spath.

University of Central Florida: Christian Clausen, Cherie Geiger and Debra Reinhart.

STS-116 . . .

(Continued from Page 1)

commands to carefully redistribute power and thermal management from one location to another. The STS-118 mission in the summer of 2007 will deliver an identical short spacer (S5) to the opposite end of the station's truss.

The first three days of the mission nearly mirror those of the previous three shuttle flights to inspect the thermal protection system tiles and the wing leading edge reinforced carbon-carbon panels, and rendezvous and dock with the International Space Station. Patrick is the prime shuttle remote manipulator system (robotic arm) operator and will lead the inspection effort using the orbiter boom sensor system. Polansky and Oefelein serve as backup shuttle arm operators.

The highest priority tasks of the flight will be to transfer one station crew member for another, install the new P5 short spacer, reconfigure the electrical power system and thermal control system and transfer extra oxygen to storage tanks on the outside of the U.S. Quest Airlock.

For the latest updates, visit **http://www.nasa.gov/shuttle**.

2006 Family Day at the Kennedy Space Cente

More than 44,000 people took advantage of the Kennedy Space Center/ Cape Canaveral Air Force Station 2006 Family Day on Nov. 18, viewing hundreds of exhibits and the Space Shuttle Discovery on Launch Pad 39B before it begins mission STS-116, scheduled for December. Long lines formed at the facilities, including the Vehicle Assembly Building, Orbiter Processing Facility bay 2 and the Launch Control Center, among many others. Astronauts also autographed memorabilia at the Operations and Checkout Building's Mission Briefing Room, the Parachute Refurbishment Facility and the Air Force Museum at the Cape Canaveral Air Force Station.

ORBITER PROCESSING Facility bay 2 was a popular stop for visitors (above) at the 2006 Family Day on Nov. 18. Below, employees and visitors get an up-close look at Space Shuttle Endeavour in the OPF bay 2.

WITH THE theme "Launching the Future Together: A Family Celebration," more than facilities at the Kennedy Space Center and the Cape Canaveral Air Force Station du Vehicle Assembly Building. All badged KSC, CCAFS and 45th Space Wing employ

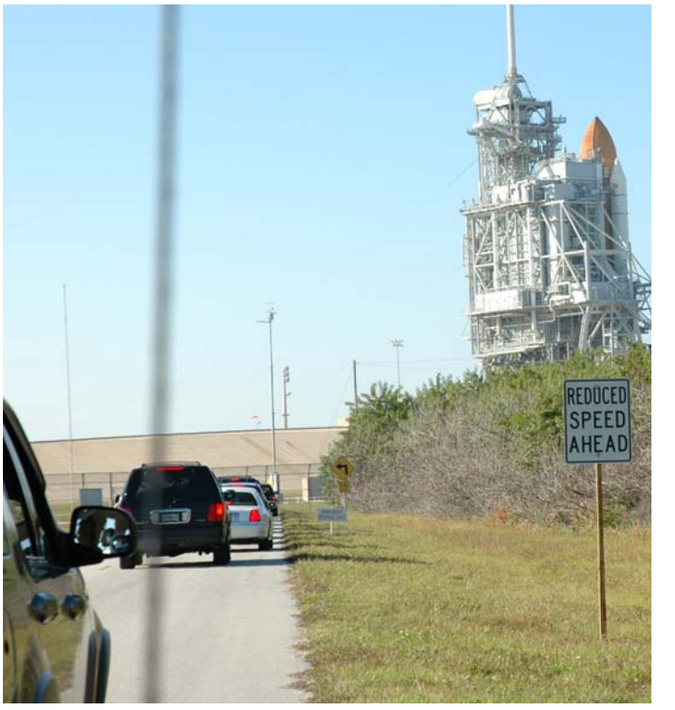
er and Cape Canaveral Air Force Station

n 44,000 people got a rare glimpse of the uring the 2006 Family Day, including the ees were able to escort their guests.

EMPLOYEES ESCORTED family and friends inside the Vehicle Assembly Building (above) during the 2006 Family Day. Exhibits inside the VAB explained how flight elements are processed, and displayed an actual space shuttle tire, safety information and more.

GUESTS AT the 2006 Family Day enjoy learning about the Tile Processing Facility. NASA astronauts also autographed items at many of the facilities.

TRAFFIC LINES formed by midday during the 2006 Family Day to view Space Shuttle Discovery on Launch Pad 39B. This was the first opportunity to bring guests to the center to view facilities since 2000.



National Disability Mentoring Day focuses on 'unique abilities'

By Jennifer Wolfinger
Staff Writer

Leaders want Kennedy Space Center to be a catalyst for professional growth for people with disabilities, and the Disability Awareness and Action Working Group supported that goal on Nov. 14 by hosting events celebrating National Disability Mentoring Day.

Twenty-six Brevard County high school and college students met their center mentors at the Kennedy Learning Center. Susan Kroskey, the Disability Awareness group's executive advisor, welcomed the students and the 24 employees who volunteered to share their work experiences throughout the day.

"We want to make this place the best place in the world for people with disabilities to work," she said, emphasizing that valuable contributions are made by everybody.

Center Director Jim Kennedy provided an encouraging message.

"We don't focus on people's disabilities. We focus on people's unique abilities," he said. "In the state, there are 700 disabled students to cherish. I believe we've got some of the best out of those 700."

To push the students to pursue their dreams, Kennedy revealed that his grandfather was blind but still accomplished much, including rebuilding a church that was destroyed by a tornado.

"I hope you will — and I promise you we will — focus on your abilities at Kennedy Space Center," he said.

A trio of employees signed a patriotic song and Sam Haddad sang along before Exploration Station Specialist Peter Abramovs conducted informative experiments. His main message was to inform the students that many overwhelming problems can be solved by breaking them down into manageable pieces, then moving on to the next step.

Abramovs included many students in the science demonstrations. Justin Brash and Athen Bretz helped to show how liquids solidify. By presenting a scaled-down version of Earth and the moon, Brian Day offered a visualization of the major leap the space program will make from launching current missions to traveling to the moon. Using a balloon, Koreann Lo provided an example of the self-healing materials NASA scientists are working on today.

The students finished the day by participating in a real work day with their individual mentors and visiting various center sites. Through their applications, the students expressed interest in 17 disciplines and were matched with their mentors based on their preference.

The event is sponsored by the American Association of People with Disabilities, and is part of a White House effort to increase the profile of National Disability Employment Awareness Month, celebrated every October. It is a national partnership between the organization and the U.S. Department of Labor Office of Disability Employment Policy.

For more information about the Disability Awareness group, visit **http://nasa.ksc.nasa.gov/DAAWG**.

EXPLORATION STATION Specialist Peter Abramovs (above) performs an experiment for National Disability Mentoring Day on Nov. 14. Below, the group and their mentors gather for a group photograph at the Kennedy Learning Center.

Kennedy, astronauts visit Atlanta, Virgin Islands Explorer Schools

By Amber Philman, NASA Public Affairs

Kennedy Space Center Director Jim Kennedy and NASA astronauts Roger Crouch and Ellen Baker recently visited NASA's newest Explorer Schools in Atlanta and the Virgin Islands.

The visits were part of the agency's effort to share the nation's Vision for Space Exploration with the next generation of explorers. Each year, education teams from the Explorer Schools program work with NASA personnel to develop action plans for staff and students. The plan promotes the use of NASA content and programs that address the fields of mathematics, science and technology through authentic experiences.

Kennedy's presentation to the students, staff and parents at three schools focused on NASA's steppingstone approach to exploring the moon, Mars and other planets. He also discussed ways space impacts our lives and how people and machines rely on each other in space.

"We want you to be a part of our program one day," he said to the students. "As part of the Vision, we are going to take people to Mars and it's going to be done with people who are now in the middle-school age group."

He also reminded the students to take advantage of the opportunity they have been given through the Explorer Schools program.

"There were only 26 Explorer Schools selected this year," Kennedy said. "I am so proud of our three schools, which I know worked so hard to compete with all the other contenders for this program."

The students were just as excited to meet a NASA astronaut. Roger Crouch talked to the students about his experience in space, and how they should work hard in school so they can work at NASA and carry on the Vision. "We need your creative minds to come up with new ideas and to come and share those ideas with NASA. We need you on our team," said Crouch.

For information about the Explorer School program, visit **http://explorerschools.nasa.gov**.

Remembering Our Heritage

43 years ago: Thanksgiving Day brings new name for Launch Operations Center

By Kay Grinter
Reference Librarian

Thanksgiving Day in 1963 was a sad one for Americans, in general, and for NASA employees in particular. The space program's supporter and mentor, President John F. Kennedy, was assassinated in Dallas in front of the cameras on Nov. 22, less than a week before the holiday.

Kennedy and Vice President Lyndon Johnson had visited NASA's Launch Operations Center in Florida just six days before the attack.

Jack King was chief of public information for NASA at the Launch Operations Center in 1963. Best known as the "voice of Apollo" for his countdown commentary during the lunar program, King works in internal relations for United Space Alliance at Kennedy Space Center today.

"We were all still recovering from the tragedy. I was at home having Thanksgiving dinner with friends when Bill Lloyd of NASA Headquarters public affairs called to give me a 'heads up' that an announcement was coming," King recalled.

Newly installed as president, Johnson made the announcement in his Thanksgiving address which said, in part, "To honor his memory and the future of the works he started, I have today determined that station No. 1 of the Atlantic Missile Range and the NASA Launch Operations Center shall hereafter be known as the John F. Kennedy Space Center.

"I have also acted, with the understanding and support of my friend, the governor of Florida, Farris Bryant, to change the name of Cape Canaveral. It shall be known hereafter as Cape Kennedy."

Johnson issued Executive Order No. 11129 the next day.

"It gave us all a great sense of pride that our center would be named after the fallen president who started us on this great adventure," said King. "We felt we had lost one of our own. He and Johnson visited often enough that we knew their Secret Service agents by their first names."

NASA Administrator James Webb followed by issuing an order changing the center's name on Dec. 20. The U.S. Air Force changed the name of its neighboring installation to Cape Kennedy Air Force Station on Jan. 7, 1964.

The new name for the space center was embraced immediately, but renaming the Cape was not well received. A protest movement to restore its original name gained momentum over the next 10 years.

Florida Gov. Reuben Askew signed a legislative enactment on May 29, 1973, restoring the name to Cape Canaveral.

DURING A presidential tour of the Cape Canaveral facilities (above), President John Kennedy (seated fourth from left) and Vice President Lyndon Johnson (second from left) hear a briefing. Former NASA Public Affairs Officer Jack King is seen seated above and to the far right. Below, President Kennedy talks to employees in front of a hangar.

INVENTION . . . (Continued from Page 1)

chemicals. The Kennedy team wanted to take a different approach, so the group turned to the big potential of nanotechnology for a solution.

Their answer came in the form of very small particles of iron 100 nanometers in size. The team devised a mixture of iron, water, vegetable oil and a substance called a "surfactant" that aids in attracting contaminants. The result was a black syrup the team dubbed "emulsified zero-valent iron." The goo is designed to be injected into groundwater and behave like the DNAPL solvents. The emulsified iron moves as a blob of little oily bubbles, closing in on the solvent.

"When the solvent gets close to it, it gets sucked inside," said Quinn. "The reaction takes place inside the bubble. Nothing leaves the bubble until it's completely degraded." Once the reaction is finished, the only things left of the solvent are harmless chloride salt and ethene, a benign gas.

And what of the vegetable oil still swimming around in the groundwater? "The oil will eventually be eaten by naturally occurring bacteria," said Quinn.

Even more stunning than the simple genius of the team's remedy is how quickly it works.

"In a really contaminated site, even though the complete reaction may take a couple of weeks or a month, once you pump this stuff into the ground, the water clears up immediately. So you can take samplings of the water and the water is clean," said Brooks.

The team's emulsified iron cleans up contaminated water so well, it's no wonder the compound is NASA's clear winner for the invention of the year.

Free flu shots available at center's health facilities

The Occupational Health Facility has received a supply of influenza vaccine for the 2006-07 flu season. No appointment is needed. The vaccine will be administered during normal clinic hours:

• Occupational Health Facility (KSC Industrial Area), Monday through Friday, 7 a.m. to 5 p.m.

• Launch Area Clinic (KSC Launch Complex-39 Area, Multi-Function Facility), Monday through Friday, 7 a.m. to 3 p.m.

Influenza season typically peaks in the United States between December and March. The severity of each season is unpredictable.

It will help, however, to practice healthy habits, such as washing your hands frequently, covering your mouth and nose when coughing or sneezing, avoiding others when they are sick and staying away from others when you are sick.

Being vaccinated against seasonal influenza is important because it helps eliminate confusion with more severe diseases, such as avian influenza or SARS. This is because when a person first becomes ill from seasonal influenza, it is often difficult to tell the virus apart from some of the more severe diseases. This may raise unnecessary fears in the individual and potentially tie up critical medical resources.

It is especially important for the following people to be vaccinated:

• People 65 years of age or older;

• Adults with chronic lung or heart disorders, including heart disease and asthma;

• Women who will be pregnant during the influenza season;

• Adults with chronic metabolic diseases, such as diabetes;

• Adults with kidney diseases;

CENTER DIRECTOR Jim Kennedy receives an influenza vaccine. Influenza season peaks between December and March.

• Adults with blood disorders, such as sickle cell anemia;

• Adults with weakened immune systems, such as those with some forms of cancer, on chemotherapy, or people with HIV/AIDS; and

• Household members and out-of-home caregivers of infants under the age of 6 months.

For questions about the influenza vaccine, call the Occupational Health Facility at 867-3346.

Combined Federal Campaign for civil service surpasses goal

This year's Combined Federal Campaign ended on a high note with nearly 70 percent of NASA's Kennedy Space Center civil service work force contributing more than $415,000 to surpass the goal by $15,000. Of that amount, $140,000 (or one-third of the total contributions) is targeted to support local Brevard County and Central Florida agencies.

Center Director Jim Kennedy and the rest of the NASA senior staff were thrilled with the results and broke into applause when briefed on the success of this year's campaign.

The Combined Federal Campaign is an annual fundraising drive conducted nationally by federal employees in their workplace. Each year, federal employees and military personnel raise millions of dollars through the campaign to benefit thousands of non-profit charities.

The success of this year's campaign will be celebrated as part of the KSC Holiday Celebration on Dec. 14 at KARS Park I.

THE NASA Kennedy Space Center civil service work force donated more than $415,000 to this year's Combined Federal Campaign.

Energy office reminds employees to 'Choose Wisely, Use Wisely'

In celebration of Energy Awareness Month, the Space Gateway Support Energy and Water Management Office recently manned the Energy Awareness booth in the Headquarters Building lobby. With the theme "Energy Independence Depends on Us – Choose Wisely, Use Wisely," attendance at the booth was steady as the group answered questions on light-emitting diodes, compact fluorescent light bulbs, programmable thermostats and energy conservation at KSC.

The group would like to thank all the workers who participated in the "Guess the Electric Bill" contest at the exhibit. The winner of the LED flashlight is Yvonne Parker of NASA for guessing closest to the October 2006 electric bill for KSC. The actual October Florida Power Light bill for KSC was $1,776,825.01. Parker's guess was $1,777,777 — a difference of only $951.99. KSC's energy costs for fiscal year 2006 were $5 million higher than in 2005. Most of the increase is due to the higher price of the fuels used to generate electricity.

John F. Kennedy Space Center

Spaceport News

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Contributions are welcome and should be submitted two weeks before publication to the Media Services Branch, IDI-011. E-mail submissions can be sent to *Jeffery.Stuckey@ksc.nasa.gov.*

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